

REMARKS

I. Formal Matters

A. Status of Claims

Claims 1-4, 6, and 9-14 are pending in the application. Claims 6, 9-12 and 14 are withdrawn from consideration. Claims 1-4 and 13 are being examined. Claims 1, 2, 4, and 13 are rejected. Claim 3 is objected to.

Claim 1 has been amended to recite that the polypeptide that comprises amino acids 37 to 346 of SEQ ID NO: 2 has 90% or more homology to SEQ ID NO: 2, as supported, for example, at page 10 of the specification. Claim 1 has also been amended to simplify the language by deleting the recitation that the polypeptide is a polypeptide of a sulfotransferase. This amendment is editorial in nature. Finally Claim 1 has been editorially amended to delete recitation of transpositions, as such are encompassed by substitutions.

Claim 13 has been amended in accordance with the Examiner's suggestion to refer only to a polypeptide.

Claim 14 has been editorially amended to depend directly from Claim 1 rather than indirectly via Claim 13.

Upon allowance of Claim 1, the Examiner is requested, respectfully to rejoin Claim 14.

II. Detailed Action

A. Claim Objections

1. Claim 13 was objected to because the recitation “an enzyme agent” should be “an enzyme”.

The amendments to Claim 13 eliminate this issue.

2. Claim 13 was objected to because of the recitation “the polypeptide according to Claim 1 or a sulfotransferase which comprises the polypeptide according to Claim 1.” The Examiner believes that Claim 13 can cover both embodiments by just reciting a “polypeptide” according to Claim 1.

The Examiner’s suggestion has been adapted.

3. Claims 5 and 13 were objected to under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous Claim.

Claim 5 has been canceled.

Claim 13 has been amended to delete the preamble. However, Applicant submits that the product made by the polypeptide of Claim 1 is not always the glucosaminoglycan recited in Claim 13. Thus, Claim 13 further limits Claim 1 and is a proper dependent Claim.

B. Claim Rejections - 35 U.S.C. § 112

1. Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite and vague for failing to particularly point out and distinctly Claim the subject matter which Applicant regards as the invention.

The Examiner asserted that the term “transposition” is indefinite.

“Transposition” means that two amino acids have been transposed. Accordingly, a “transposition” is covered by reciting a “substitution.” Therefore, Claim 1 has been amended to delete reference to a “transposition.”

2. Claims 1, 4, and 13 were rejected under 35 U.S.C. § 112, first paragraph, as lacking enablement. The Examiner admitted that the specification is enabling for a polypeptide of a sulfotransferase of SEQ ID NO:2 from a human. However, the Examiner asserted that the specification does not reasonably provide enablement for any or all sulfotransferases or any sulfotransferase having one or more amino acid substitutions, deletions, insertions, additions and/or transpositions of at least one amino acid in the amino acid sequence of SEQ ID NO:2 or any sulfotransferase having 90% or more sequence homology to SEQ ID NO:2.

The first issue raised by the Examiner appears to be based on the “comprising” language used to describe the polypeptide which comprises amino acid numbers 37 to 346 in the amino acid sequence represented by SEQ ID NO:2. The Examiner appears to be asserting that one of ordinary skill in the art would only be able to make (isolate) an active polypeptide comprising a fragment consisting of amino acid numbers 37 to 346 if the polypeptide is from a human.

In order to address this issue, Claim 1 has been amended to recite that the polypeptide that contains amino acid numbers 37 to 346 has 90% percent or more homology to SEQ ID NO:2. Applicant submits that any such polypeptide is so closely related to SEQ ID NO:2 that it would be expected to retain activity.

The second issue raised by the Examiner pertains to how to make the modified polypeptide, i.e., the polypeptide having a substitution, deletion, insertion, and/or addition of at least one amino acid in the amino acid sequence represented by SEQ ID NO:2 and which has 90% or more homology with the amino acid sequence represented by SEQ ID NO: 2 and activity of transferring a sulfate group from a sulfate group donor to a glycosaminoglycan which is a sulfate group acceptor. The Examiner stated that the specification does not teach which amino acids of the fragment can be changed without losing activity or the general tolerance of the sulfotransferase of SEQ. ID NO. 2 for modification.

Applicants submit that any polypeptide that has at least 90% homology to SEQ ID NO:2 would be expected to have the recited activity.

In view of the above remarks and amendments to Claim 1, the Examiner is requested, respectfully, to reconsider and remove the rejection.

C. Claim Rejections - 35 U.S.C. § 102

1. Claims 1, 2, 4, and 13 were rejected under 35 U.S.C. § 102(e) as being anticipated by Liu et al. (WO2004/005475 A2, published 1/23/2004, and having an effective U.S. filing date of 7/5/2002, based on 60/394,199).

2. Claims 1, 2, 4, and 13 were rejected under 35 U.S.C. § 102(a) as being anticipated by Xia et al., J. Biol. Chem., E-published July 23, 2002.

The Examiner asserted that both references teach SEQ ID NO:2.

These rejections are overcome by providing a sworn translation of JP 2002-057527, showing that Applicant was in possession of SEQ ID NO:2 prior to the July 5, 2002 effective U.S. filing date of Liu et al. and prior to the July 23, 2002 publication date of Xia et al. SEQ ID NO: 2 is found in the sequence listing.

Accordingly, the Examiner is requested, respectfully, to remove this rejection.

D. Allowable Subject Matter

Applicant Appreciates the indication that Claim 3 is allowable over prior art recorded.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 10/506,548

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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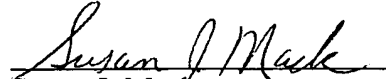
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Respectfully submitted,


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